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# Digital Image Processing in Radiography

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In digital radiography, the transmitted x-ray beam recorded by a detector is first recorded as raw data related to the energy deposited in the sensitive region of each pixel.
Raw data is then transformed to a 'For Processing' image by correcting for gain non-uniformity and bad pixels.
Finally, the 'For Processing' image is transformed to a 'For Presentation' image that is intended for viewing.

The processes used in the presentation transformation have become an essential element of image quality.
These processes include exposure recognition, grayscale rendition, edge restoration, noise reduction, and broad area equalization. The numeric methods used to implement these processes will be reviewed and related to current commercial image processing solutions.

Learning Objectives:

A. Understand how image processing is integrated. into a sequence of steps used in generating a radiograph.
B. Conceptually understand the component processing steps and their effect on image quality.
C. Learn how certain commercial systems implement processing.
D. Understand how processing can be adjusted by a medical physicist to achieve consistent presentation characteristics.